SEQUENCE LISTING

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BITEAU, BENOIT

<120> APPLICATIONS OF A NEW CLASS OF ENZYMES: SULFIREDOXINS

<130> 40528U

<140> 10/563,375
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<151> 2004-07-02

<150> FR 03/08212
<151> 2003-07-04

<160> 17

<170> PatentIn Ver. 3.3

<210> 1
<211> 127
<212> PRT
<213> Saccharomyces cerevisiae

<400> 1
Met Ser Leu Gln Ser Asn Ser Val Lys Pro Thr Glu Ile Pro Leu Ser
1 5 10 15

Glu Ile Arg Arg Pro Leu Ala Pro Val Leu Asp Pro Gln Lys Ile Asp
20 25 30

Ala Met Val Ala Thr Met Lys Gly Ile Pro Thr Ala Ser Lys Thr Cys
35 40 45

Ser Leu Glu Gln Ala Glu Ala Ala Ala Ser Ala Gly Glu Leu Pro Pro
50 55 60

Val Asp Val Leu Gly Val Arg Val Lys Gly Gln Thr Leu Tyr Tyr Ala
65 70 75 80

Phe Gly Gly Cys His Arg Leu Gln Ala Tyr Asp Arg Arg Ala Arg Glu
85 90 95

Thr Gln Asn Ala Ala Phe Pro Val Arg Cys Arg Val Leu Pro Ala Thr
100 105 110

Pro Arg Gln Ile Arg Met Tyr Leu Gly Ser Ser Leu Asp Ile Glu
115 120 125

<210> 2
<211> 120
<212> PRT
<213> Candida albicans

<400> 2
Met Ser Met Tyr Thr Ser Arg Leu Ala Thr Glu Tyr Val Pro Leu Ser
1 5 10 15

Glu Ile Lys Arg Pro Ile Pro Pro Val Leu Asp Tyr Gln Lys Ile Asp
20 25 30

Ala Met Leu Ser Thr Leu Lys Gly Val Pro Met Glu Ser Ala Thr Cys
35 40 45

Lys Val Glu Asp Ile Thr Ala Gly Glu Leu Pro Pro Ile Asp Val Phe
50 55 60

Lys Ile Arg Glu Asn Gly Lys Asn Phe Tyr Phe Ala Phe Gly Gly Cys
65 70 75 80

His Arg Phe Gln Ala Tyr Asp Arg Ile Ser Lys Glu Thr Glu Lys Glu
85 90 95

Val Met Val Lys Ser Arg Ile Leu Pro Ala Thr Arg Lys Ser Leu Arg
100 105 110

Ile Tyr Leu Gly Ala Ser Val Asp
115 120

<210> 3
<211> 124
<212> PRT
<213> Schizosaccharomyces pombe

<400> 3
Met Thr Ser Ile His Thr Gly Ser Asn Asn Asn Ile Val Glu Leu Asp
1 5 10 15

Met Ser Glu Leu Ile Arg Pro Ile Pro Pro Val Leu Asp Met Asn Lys
20 25 30

Val Asn Ser Met Met Glu Thr Met Thr Gly Lys Thr Pro Pro Ala Ser
35 40 45

Cys Gly Leu Thr Ser Glu Asp Leu Glu Ala Gly Glu Leu Pro Pro Val
50 55 60

Asp Val Leu Thr Phe Lys Lys Ser Gly Lys Pro Tyr Tyr Phe Ala Phe
65 70 75 80

Gly Gly Cys His Arg Leu Arg Ala His Asp Glu Ala Gly Arg Lys Lys
85 90 95

Val Arg Cys Lys Leu Val Asn Cys Ser Pro Asn Thr Leu Arg Leu Tyr
100 105 110

Leu Gly Ala Ser Ala Asn Lys Phe Leu Asp Ser Asp
115 120

<210> 4
<211> 137
<212> PRT
<213> Homo sapiens

<400> 4
Met Gly Leu Arg Ala Gly Gly Thr Leu Gly Arg Ala Gly Ala Gly Arg
1 5 10 15

Gly Ala Pro Glu Gly Pro Gly Pro Ser Gly Gly Ala Gln Gly Gly Ser
20 25 30

Ile His Ser Gly Arg Ile Ala Ala Val His Asn Val Pro Leu Ser Val
35 40 45

Leu Ile Arg Pro Leu Pro Ser Val Leu Asp Pro Ala Lys Val Gln Ser
50 55 60

Leu Val Asp Thr Ile Arg Glu Asp Pro Asp Ser Val Pro Pro Ile Asp
65 70 75 80

Val Leu Trp Ile Lys Gly Ala Gln Gly Gly Asp Tyr Phe Tyr Ser Phe
85 90 95

Gly Gly Cys His Arg Tyr Ala Ala Tyr Gln Gln Leu Gln Arg Glu Thr
100 105 110

Ile Pro Ala Lys Leu Val Gln Ser Thr Leu Ser Asp Leu Arg Val Tyr
115 120 125

Leu Gly Ala Ser Thr Pro Asp Leu Gln
130 135

<210> 5
<211> 136
<212> PRT
<213> Mus musculus

<400> 5
Met Gly Leu Arg Ala Gly Gly Ala Leu Arg Arg Ala Gly Ala Gly Pro
1 5 10 15

Gly Ala Pro Val Val His Gly Pro Gly Gly Ala Gln Gly Gly Ser Ile
20 25 30

His Ser Gly Cys Ile Ala Thr Val His Asn Val Pro Ile Ala Val Leu
35 40 45

Ile Arg Pro Leu Pro Ser Val Leu Asp Pro Ala Lys Val Gln Ser Leu
50 55 60

Val Asp Thr Ile Leu Ala Asp Pro Asp Ser Val Pro Pro Ile Asp Val
65 70 75 80

Leu Trp Ile Lys Gly Ala Gln Gly Gly Asp Tyr Tyr Tyr Ser Phe Gly
85 90 95

```
Gly Cys His Arg Tyr Ala Ala Tyr Gln Gln Leu Gln Arg Glu Thr Ile
            100                 105                 110

Pro Ala Lys Leu Val Arg Ser Thr Leu Ser Asp Leu Arg Met Tyr Leu
        115                 120                 125

Gly Ala Ser Thr Pro Asp Leu Gln
    130                 135
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<210> 6
<211> 162
<212> PRT
<213> Drosophila melanogaster

<400> 6

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Met Glu Phe Ile Ser His Phe Leu Arg Ala Thr Ser Arg Arg Thr Ala
  1               5                  10                  15

Ala Leu Gly Pro Ile Leu Gln Arg Asn Arg Ser Glu Ile Ile Gln Lys
             20                  25                  30

Gln Ser Leu Thr Asn Arg Gln Ala Phe Arg Arg Tyr Arg Ser Ser Cys
         35                  40                  45

Ser Thr Met Asp Thr Thr Val His Ser Ala Gly Ile Asp Glu Thr His
     50                  55                  60

Leu Val Pro Met Ser Val Ile Gln Arg Pro Ile Pro Ser Val Leu Asp
 65                  70                  75                  80

Glu Gln Lys Val Gln Ser Leu Met Glu Thr Ile Lys Asn Glu Thr Ser
                 85                  90                  95

Glu Asp Glu Val Pro Pro Ile Asp Leu Leu Trp Ile Ser Gly Ser Glu
            100                 105                 110

Gly Gly Asp Tyr Tyr Phe Ser Phe Gly Gly Cys His Arg Phe Glu Ala
        115                 120                 125

Tyr Lys Arg Leu Gln Arg Pro Thr Ile Lys Ala Lys Leu Val Lys Ser
    130                 135                 140

Thr Leu Gly Asp Leu Tyr His Tyr Met Gly Ser Ser Ala Pro Lys Tyr
145                 150                 155                 160

Leu Ala
```

<210> 7
<211> 125
<212> PRT
<213> Arabidopsis thaliana

<400> 7

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Met Ala Asn Leu Met Met Arg Leu Pro Ile Ser Leu Arg Ser Phe Ser
  1               5                  10                  15
```

```
Val Ser Ala Ser Ser Ser Asn Gly Ser Pro Pro Val Ile Gly Gly Ser
             20                  25                  30

Ser Gly Gly Val Gly Pro Met Ile Val Glu Leu Pro Leu Glu Lys Ile
         35                  40                  45

Arg Arg Pro Leu Met Arg Thr Arg Ser Asn Asp Gln Asn Lys Val Lys
     50                  55                  60

Glu Leu Met Asp Ser Ile Arg Gln Ile Gly Leu Gln Val Pro Ile Asp
 65                  70                  75                  80

Val Ile Glu Val Asp Gly Thr Tyr Tyr Gly Phe Ser Gly Cys His Arg
                 85                  90                  95

Tyr Glu Ala His Gln Lys Leu Gly Leu Pro Thr Ile Arg Cys Lys Ile
            100                 105                 110

Arg Lys Gly Thr Lys Glu Thr Leu Arg His His Leu Arg
        115                 120                 125
```

<210> 8
<211> 86
<212> PRT
<213> Thermosynechococcus elongatus

<400> 8

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Met Arg Val Leu Asp Leu Pro Leu Asn Ala Ile Arg Arg Pro Leu Val
  1               5                  10                  15

Arg Gln Thr Asp Pro Ala Lys Val Ala Ala Leu Met Ala Ser Ile Ala
             20                  25                  30

Glu Ile Gly Gln Gln Glu Pro Ile Asp Val Leu Glu Val Glu Gly His
         35                  40                  45

Tyr Tyr Gly Phe Ser Gly Cys His Arg Tyr Glu Ala Cys Gln Arg Leu
     50                  55                  60

Gly Leu Pro Thr Ile Arg Ala Arg Val Arg Arg Ala Pro Arg Ser Val
 65                  70                  75                  80

Leu Asn Leu His Leu Ala
                 85
```

<210> 9
<211> 87
<212> PRT
<213> Nostoc sp.

<400> 9

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Met Val Arg Val Gln Glu Ile Pro Leu Asn Gln Ile Arg Arg Pro Leu
  1               5                  10                  15
```

```
Pro Arg Gly Asn Asp Pro Tyr Lys Val Gln Ala Leu Met Glu Ser Ile
            20                  25                  30

Ala Ala Ile Gly Gln Gln Glu Pro Ile Asp Val Leu Glu Val Asp Gly
        35                  40                  45

Gln Tyr Tyr Gly Phe Ser Gly Cys His Arg Tyr Glu Ala Cys Gln Arg
    50                  55                  60

Leu Gly Lys Glu Thr Ile Leu Ala Arg Val Arg Lys Ala Pro Arg Ser
65                  70                  75                  80

Val Leu Lys Met His Leu Ala
                85
```

<210> 10
<211> 141
<212> PRT
<213> Oryza sativa

<400> 10

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Met Ala Ala Ser Gly Phe Leu Leu Arg Cys Pro Ala Ala Pro Ser Ala
  1               5                  10                  15

Val Pro Leu Trp Gly Arg Ser Gly Arg Gly Gly Gly Gly Gly Leu Ala
            20                  25                  30

Phe Ser Ala Ser Ser Ser Asn Gly Ala Ala Val Pro Ser Ser Leu Ser
        35                  40                  45

Asp Ser Glu Lys Lys Gly Pro Val Val Met Glu Ile Pro Leu Asp Lys
    50                  55                  60

Ile Arg Arg Pro Leu Met Arg Thr Arg Ala Asn Asp Pro Ala Lys Val
65                  70                  75                  80

Gln Glu Leu Met Asp Ser Ile Arg Val Ile Gly Leu Gln Val Pro Ile
                85                  90                  95

Asp Val Leu Glu Val Asp Gly Val Tyr Tyr Gly Phe Ser Gly Cys His
            100                 105                 110

Arg Tyr Glu Ala His Gln Arg Leu Gly Leu Pro Thr Ile Arg Cys Lys
        115                 120                 125

Val Arg Arg Gly Thr Lys Glu Thr Leu Arg Ile Gly Cys
    130                 135                 140
```

<210> 11
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 11
gtcccgcggc ggcggcgacg 20

<210> 12
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 12
agcaggtgcc aaggaggctg 20

<210> 13
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 13
ttaattgaat tcatggggct gcgtgcagga gg 32

<210> 14
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 14
ttttcctttt gcggccgcct actactgcaa gtctggtgtg gatg 44

<210> 15
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<221> MOD_RES
<222> (2)
<223> Gly or Ser

<400> 15
Phe Xaa Gly Cys His Arg
1 5

<210> 16
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 16
Phe Ser Gly Cys His Arg
1 5

<210> 17
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic 6xHis tag

<400> 17
His His His His His His
1 5